

**Amendments to the Claims**

The following listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1-4368. (cancelled)

4369. (previously presented): A mixture produced from a hydrocarbon containing formation, comprising:

a non-condensable component comprising hydrocarbons having carbon numbers of less than about 5, wherein a weight ratio of the hydrocarbons having carbon numbers from 2 through 4 to methane is greater than approximately 1, and wherein greater than about 15 % by weight of the non-condensable component comprises H<sub>2</sub>; and

condensable hydrocarbons, comprising:

oxygenated hydrocarbons, wherein greater than about 1.5 % by weight of the condensable hydrocarbons comprises oxygenated hydrocarbons;

olefins, wherein less than about 10 % by weight of the condensable hydrocarbons comprises olefins; and

aromatic compounds, wherein greater than about 20 % by weight of the condensable hydrocarbons comprises aromatic compounds.

4370. (previously presented): The mixture of claim 4369, wherein a molar ratio of ethene to ethane in the non-condensable component ranges from about 0.001 to about 0.15.

4371. (previously presented): The mixture of claim 4369, wherein the condensable hydrocarbons comprise nitrogen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is nitrogen.

4372. (previously presented): The mixture of claim 4369, wherein the condensable hydrocarbons comprise oxygen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is oxygen.

4373. (previously presented): The mixture of claim 4369, wherein the condensable hydrocarbons comprise sulfur containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is sulfur.

4374. (previously presented): The mixture of claim 4369, wherein the condensable hydrocarbons comprise oxygen containing compounds, wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons comprise oxygen containing compounds, and wherein the oxygen containing compounds comprise phenols.

4375. (original): The mixture of claim 4369, wherein the condensable hydrocarbons comprise multi-ring aromatics, and wherein less than about 5 % by weight of the condensable hydrocarbons comprises multi-ring aromatics with more than two rings.

4376. (original): The mixture of claim 4369, wherein the condensable hydrocarbons comprise asphaltenes, and wherein less than about 0.3 % by weight of the condensable hydrocarbons are asphaltenes.

4377. (original): The mixture of claim 4369, wherein the condensable hydrocarbons comprise cycloalkanes, and wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons are cycloalkanes.

4378. (previously presented): The mixture of claim 4369, wherein the non-condensable component comprises hydrogen, and wherein the hydrogen is greater than about 10 % by volume at 25 °C and one atmosphere absolute pressure and less than about 80 % by volume at 25 °C and one atmosphere absolute pressure of the non-condensable component.

4379. (previously presented): The mixture of claim 4369, further comprising ammonia, and wherein greater than about 0.05 % by weight of the mixture is ammonia.

4380. (currently amended): The mixture of claim 4369, further comprising ammonia, and wherein at least a portion of the ammonia is used to produce fertilizer.

4381. (previously presented): The mixture of claim 4369, wherein less than about 15 % by weight of the hydrocarbons have a carbon number greater than approximately 25.

4382. (previously presented): The mixture of claim 4369, wherein about 0.1 % to about 5 % by weight of the condensable hydrocarbons comprise olefins.

4383. (previously presented): The mixture of claim 4369, wherein about 0.1 % to about 2 % by weight of the condensable hydrocarbons comprise olefins.

4384. (previously presented): The mixture of claim 4369, wherein greater than about 25 % by weight of the condensable hydrocarbons comprise oxygenated hydrocarbons.

4385. (original): The mixture of claim 4369, wherein the mixture comprises hydrocarbons having greater than about 2 carbon atoms, and wherein the weight ratio of hydrocarbons having greater than about 2 carbon atoms to methane is greater than about 0.3.

4386. (previously presented): A mixture produced from a hydrocarbon containing formation, comprising:

condensable hydrocarbons, wherein less than about 5 % by weight of the condensable hydrocarbons comprises hydrocarbons having a carbon number greater than about 25;

wherein the condensable hydrocarbons further comprise:

oxygenated hydrocarbons, wherein greater than about 5 % by weight of the condensable hydrocarbons comprises oxygenated hydrocarbons;

olefins, wherein less than about 10 % by weight of the condensable hydrocarbons comprises olefins; and

aromatic compounds, wherein greater than about 30 % by weight of the condensable hydrocarbons comprises aromatic compounds; and

a non-condensable component comprising H<sub>2</sub>, wherein greater than about 15 % by weight of the non-condensable component comprises H<sub>2</sub>.

4387. (previously presented): The mixture of claim 4386, wherein the non-condensable component comprises hydrocarbons having carbon numbers of less than 5, and wherein a weight ratio of hydrocarbons having carbon numbers from 2 through 4 to methane is greater than approximately 1.

4388. (previously presented): The mixture of claim 4386, wherein a molar ratio of ethene to ethane in the non-condensable component ranges from about 0.001 to about 0.15.

4389. (previously presented): The mixture of claim 4386, wherein the condensable hydrocarbons comprise nitrogen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is nitrogen.

4390. (previously presented): The mixture of claim 4386, wherein the condensable hydrocarbons comprise oxygen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is oxygen.

4391. (previously presented): The mixture of claim 4386, wherein the condensable hydrocarbons comprise sulfur containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is sulfur.

4392. (previously presented): The mixture of claim 4386, wherein the condensable hydrocarbons comprise oxygen containing compounds, wherein about 5 % by weight to about 30

% by weight of the condensable hydrocarbons comprise oxygen containing compounds, and wherein the oxygen containing compounds comprise phenols.

4393. (previously presented): The mixture of claim 4386, wherein the condensable hydrocarbons comprise multi-ring aromatics, and wherein less than about 5 % by weight of the condensable hydrocarbons comprises multi-ring aromatics with more than two rings.

4394. (previously presented): The mixture of claim 4386, wherein the condensable hydrocarbons comprise asphaltenes, and wherein less than about 0.3 % by weight of the condensable hydrocarbons are asphaltenes.

4395. (original): The mixture of claim 4386, wherein the condensable hydrocarbons comprise cycloalkanes, and wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons are cycloalkanes.

4396. (previously presented): The mixture of claim 4386, wherein greater than about 10 % by volume at 25 °C and one atmosphere absolute pressure and less than about 80 % by volume at 25 °C and one atmosphere absolute pressure of the non-condensable component is hydrogen (H<sub>2</sub>).

4397. (previously presented): The mixture of claim 4386, wherein greater than about 0.05 % by weight of the mixture is ammonia.

4398. (currently amended): The mixture of claim 4386, further comprising ammonia, and wherein at least a portion of the ammonia is used to produce fertilizer.

4399. (previously presented): The mixture of claim 4386, wherein about 0.1 % to about 5 % by weight of the condensable hydrocarbons comprise olefins.

4400. (previously presented): The mixture of claim 4386, wherein about 0.1 % to about 2 % by weight of the condensable hydrocarbons comprise olefins.

4401. (previously presented): The mixture of claim 4386, wherein the condensable hydrocarbons comprise oxygenated hydrocarbons, and wherein greater than about 15 % by weight of the condensable hydrocarbons comprises oxygenated hydrocarbons.

4402. (previously presented): The mixture of claim 4386, wherein the mixture comprises hydrocarbons having greater than about 2 carbon atoms, and wherein a weight ratio of hydrocarbons having greater than about 2 carbon atoms to methane is greater than about 0.3.

4403-5395. (cancelled)